



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/569,208

02/23/2006

Takuya Tsukagoshi

127153

1823

25944 7590 07/29/2008

OLIFF & BERRIDGE, PLC

P.O. BOX 320850

ALEXANDRIA, VA 22320-4850

EXAMINER

CHU, KIM KWOK

ART UNIT

PAPER NUMBER

2627

MAIL DATE

DELIVERY MODE

07/29/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/569,208	Applicant(s) TSUKAGOSHI ET AL.	
	Examiner KIM CHU	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Pre-Amendment filed on 2/23/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-9 and 12-16 is/are rejected.
- 7) ☒ Claim(s) 4-6, 10 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Objections

1. Claims 1, 5 and 6 are objected to because of the following informalities:

(a) in Claim 1, line 2, the term "between object light and reference light" should be changed to --using object light and reference light--;

(b) in Claim 1, in line 5, the phrase "and reflecting servo light" should be changed to --and the servo layer reflecting servo light--;

(c) in Claim 5, lines 1 and 2, the term "claim ~~3 or 4~~" should be changed to --claim ~~3 or 4~~ 1--; and

(d) similarly, in Claim 6, lines 1 and 2, the term "claim ~~3 or 4~~" should be changed to --claim ~~3 or 4~~ 1--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 7, 8, 9 and 12-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) in Claim 7, line 1, the preamble "A method for manufacturing a holographic recording medium" is indefinite because it is the method of manufacturing a servo layer according to Fig. 8 and section 65 in the specification. Although there are steps in the claim involving laminating a substrate, a recording layer and a spacer layer, they are just the structure of a recording medium but not particularly a manufacturing process of the recording medium. Applicant should clarify the claimed manufacturing process is for a recording medium or for a servo layer in a recording medium;

(b) similarly, in Claim 8, line 1, the preamble term "A method for manufacturing a holographic recording medium" is indefinite because it is the method of manufacturing a servo layer according to Fig. 8 and section 65 in the specification.

Art Unit: 2627

Applicant should clarify the claimed manufacturing process is for a recording medium or for a servo layer in a recording medium;

(c) in Claim 9, line 4, the term "of laser light" lacks antecedent basis because independent Claim 1 claims "light" instead of "laser light". Applicant clarify what kind of light is used; and

(d) similarly, in Claims 12-16, the terms "laser light" lacks antecedent basis because independent Claim 1 claims "light" instead of "laser light".

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless -
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.*

5. Claims 1-3 are rejected under 35 U.S.C. § 102(e) as being anticipated by Hirao et al. (U.S. Patent 7,031,037).

Hirao teaches a holographic recording medium having all of the elements and means as recited in claims 1-3. For example, Hirao teaches the following:

(a) with respect to Claim 1, the recording medium 10 having a recording layer 15 (Fig. 1) for recording an interference pattern between/using object light and reference light (Fig. 2; abstract), characterized by comprising a servo layer 13 (Fig. 1) formed on a light incident side of the recording layer 15 (light irradiate on the servo layer; column 2, lines 9 and 10), having one of wavelength selectivity and incident angle selectivity each of which allows the object light and the reference light to pass through (Fig. 1; inherent features where each layer in a recording medium is chosen to

Art Unit: 2627

respond to an light beam with optimum physical characteristics such as wavelength and incident angle), and the servo surface 13 reflecting servo light having a wavelength different from those of the object light and the reference light or servo light having an incident angle different from those of the object light and the reference light (Fig. 2, positive birefringence/negative birefringence; column 3, lines 50-55) wherein one of servo information and address information is recorded on the servo layer (Fig. 1; column 14, lines 43-51).

(b) with respect to Claim 2, the servo layer 13 (Fig. 1) is constituted by any of a phase type reflection hologram, a dielectric multilayer film, and a dichroic mirror (Fig. 1; layer 14 including servo layer 13 is made of a phase delay type resin; column 3, lines 42-49).

(c) with respect to Claim 3, the servo layer 13 is a phase type reflection hologram (Fig. 1), comprises a planar diffraction grating (Fig. 1; layer 13 has grooves) having a constant grating space, and is designed so as to reflect the incident servo light satisfying the Bragg condition and to allow the object light and the reference light not satisfying the Bragg condition to pass through (column 4, 1-3).

Allowable Subject Matter

6. Claims 4-9, 12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 7 and 8 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

8. Claims 12 and 13 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

9. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

As in claim 4, the prior art of record fails to teach or fairly suggest a holographic recording medium having the following feature:

(a) the servo layer is formed of a diffraction grating having a multilayer spheric shape and a constant grating space.

As in claim 5, the prior art of record fails to teach or

Art Unit: 2627

fairly suggest a holographic recording medium having the following feature:

(a) the servo layer is composed of a photosensitive material having a refractive index modulated by light irradiation; and the incident angle selectivity is imparted to the servo layer by setting a maximum refractive index modulation factor of the photosensitive material to 0.005 or more and 0.01 or less and a thickness of the servo layer to 5 μm or more and less than 20 μm .

As in claim 6, the prior art of record fails to teach or fairly suggest a holographic recording medium having the following feature:

(a) the servo layer is composed of a photosensitive material having a refractive index modulated by light irradiation; and the wavelength selectivity is imparted to the servo layer by setting a maximum refractive index modulation factor of the photosensitive material to 0.0008 or more and 0.005 or less and a thickness of the servo layer to 20 μm or more and 100 μm or less.

As in claims 9, 12 and 13, the prior art of record fails to teach or fairly suggest a holographic recording medium having the following features:

Art Unit: 2627

(a) a servo optical system which branches off part of laser light by a beam splitter and forms servo light incident on the holographic recording medium at nearly right angles to the servo layer; a polarizing beam splitter which splits the laser light branched off in a direction different from that of the servo light by the beam splitter into two linearly polarized light beams having orthogonal vibration planes; a reference optical system which allows one of the linearly polarized light beams split by the polarizing beam splitter to be incident on the holographic recording medium as reference light from a direction different from that of the servo light; an object optical system which allows the other of the linearly polarized light beams split by the polarizing beam splitter to be incident on the holographic recording medium as object light from a direction different from that of the servo light and the reference light; and a photodetector which detects the reflection of the servo light from the servo layer, wherein the reference optical system comprises, in order from the polarizing beam splitter side, a $1/2$ wave plate and a Fourier lens; the object optical system comprises, in order from the polarizing beam splitter side, a spatial light modulator for modulating the linearly polarized light beam according to information to be recorded and a Fourier lens; the servo optical

Art Unit: 2627

system comprises, in order from the beam splitter side, a second polarizing beam splitter, a 1/4 wave plate, and a condensing lens; the second polarizing beam splitter is designed so as to allow one of two linearly polarized light beams having orthogonal vibration planes to pass through and to reflect the other; and the photodetector is provided on a reflection optical path which is formed when the reflection of the servo light from the servo layer is incident on the second polarizing beam splitter, the servo light being incident on the servo layer after passing through the second polarizing beam splitter.

The features indicated above, in combination with the other elements of the claims, are not anticipated by, nor made obvious over, the prior art of record.

Related Prior Art

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tsukagoshi (7,372,602) is pertinent because Tsukagoshi teaches a servo layer in an optical recording medium.

Yoshinari et al. (6,540,397) is pertinent because Yoshinari teaches a servo layer in an optical recording medium.

Art Unit: 2627

11. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kim CHU whose telephone number is (571) 272-7585 between 9:30 am to 6:00 pm, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen, can be reached on (571) 272-7579.

The fax number for the organization where this application or proceeding is assigned is (571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished application is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9191 (toll free).

/Kim-Kwok CHU/

Examiner AU2627

July 18, 2008

(571) 272-7585

/HOA T NGUYEN/

Supervisory Patent Examiner, Art Unit 2627